Bridging to the cloud: The right database can make the difference

IBM

Contents

For increasing numbers of organizations, the new reality for development, deployment and delivery of applications and services is hybrid cloud. Few, if any, organizations are going to move all their strategic workloads to the cloud, but virtually every enterprise is embracing cloud for a wide variety of requirements.

In fact, hybrid cloud is the new normal for IT. IDC says more than 80 percent of enterprise IT organizations will commit to hybrid cloud by 2017,[1] and 70 percent of IT decision-makers say they will always have a mix of traditional IT and cloud architectures.[2] With important applications and workloads deployed across both on-premises and hybrid, public and private cloud environments, business and IT stakeholders must be able to access data with equal efficiency, reliability and speed—regardless of physical location, infrastructure type or time frame.

To accelerate innovation, improve the IT delivery economic model and reduce risk, organizations need to combine data and experience in a cognitive model that yields deeper and more meaningful insights for smarter decision-making. Whether the user needs a data set maintained in house for customer analytics or access to a cloud-based data store for assessing marketing program results—or any other business need—a high-performance, highly available, mixed-load database platform is required. The platform must enable fast data access in a security-rich, highly available and scalable manner, regardless of whether the data resides in a data center, departmental virtual server or on any type of cloud infrastructure.

This paper outlines what readers should consider when making a strategic commitment to a database platform that will act as a bridge from legacy environments to the cloud.

Database requirements for moving to the cloud

As enterprises accelerate the migration of workloads to the cloud, key requirements have emerged for a database platform to operate seamlessly in a hybrid cloud environment. These requirements include:

- **Support for mixed workloads:** Email, productivity suites, archiving and backup have been some of the most popular and logical workload candidates for the cloud. But hybrid cloud environments also now include strategic workloads, such as e-commerce, compliance and enterprise resource planning (ERP), so database platforms must avoid being siloed, which so often afflicts IT architectures.
- **High performance:** As mission-critical applications migrate to the hybrid cloud, databases must provide the same high performance in the cloud that organizations are used to with traditional on-premises databases.
- **High availability:** The always-on business often values availability higher than any other factor, because loss of availability translates into loss of revenue, profits, customer satisfaction and user productivity.
- **Security:** Hybrid cloud environments provide organizations with new advantages—and new challenges—surrounding security, including compliance, e-discovery and multilayer defenses. These challenges are particularly true when you add increased mobility to the mix, so database platforms must be rock-solid in threat detection, prevention and remediation.

- **Seamless operation across on-premises servers and a variety of cloud architectures:** As today's enterprise becomes more fluid in terms of where data resides, database platforms must ensure the seamless, secure and reliable transmission of and access to data across all architectures, regardless of infrastructure type or location.
- **Easy management of scale:** As demand spikes and users increase, database platforms must accommodate hyperscalability without putting unnecessary and onerous management burdens on IT staff. Therefore, a common platform that provides scalable and intelligent data management tools across the enterprise, including on-premises, hybrid and cloud environments, is essential. Automation is at the heart of the well-managed database platform.
- **Support for all data types:** Much has been made of the astronomical growth of unstructured data, but database platforms operating in a hybrid environment must be able to support large quantities of structured legacy data, as well as semi-structured data.

Meeting these requirements is essential, because it provides organizations with the flexibility to enter at any point in the cloud adoption curve, retain existing investments and have their database platforms support assets on premises or on any of a number of different cloud environments.

How IBM Db2 acts as your bridge to the cloud

Against these exacting demands of a hybrid cloud environment, organizations need options and flexibility in their database platforms. Specifically, they need several database options. Each should be optimized for different architectural and workload requirements, but with a consistent framework and design to simplify interoperability, always-available access and a smooth transition to the hybrid cloud model.

IBM® Db2® database, which has long been synonymous with high performance, robust data protection and the ability to support large, complex enterprise environments, offers a broad range of database options that simplify the transition to a hybrid cloud. From the always-on business that needs the power and performance of a traditional on-premises database to the hybrid IT organization that's comfortable with managed services and cloud-centric databases, IBM has you covered. IBM provides an ideal mix of database solutions for rich analytics, mixed workloads and flexible service delivery.

IBM Db2 software is an enterprise-class database management system that handles mixed workloads and is consistently upgrading to support more features, higher performance and greater scalability. The latest Db2 release, Version 11, is ideal for performance-intensive workloads, such as data warehousing, analytics, online transaction processing (OLTP) and large data set applications like those used for seismic exploration and financial modeling.

With Version 11, column-organized tables are used in massively parallel processing environments, enabling IBM BLU Acceleration® technology, which delivers in-memory speeds at scale, for use in databases that extend well beyond the petabyte range. For enterprises that are moving to a hybrid cloud architecture and concerned about data protection and availability, Db2 software improves resilience and business continuity by eliminating the need to reinitialize high-availability disaster recovery (HADR) standby databases during upgrades.

IBM also offers more options to enterprises transitioning to a hybrid cloud environment with IBM Db2 Hosted service, which provides the same functionality as on-premises versions of Db2. Db2 Hosted helps ensure compatibility with the core Db2 engine as well as with Oracle SQL environments, making it easier to migrate applications and tools to a hybrid cloud.

IBM provisions and hosts Db2 Hosted in more than 30 IBM data centers around the world. Database administrators control Db2 Hosted in the same way they have always done with on-premises Db2 systems.

Finally, IBM offers IBM Db2 Warehouse on Cloud and IBM Db2 on Cloud, cloud-based managed services optimized for analytics and OLTP workloads respectively. There are multiple service plans available with scalable hardware, including storage, memory and cores, and flexible payment options designed to meet the evolving database requirements of a wide range of workloads across enterprises of all sizes.

Why IBM Db2 makes a difference

Moving key workloads to the cloud—without abandoning reliable and familiar on-premises solutions—is no longer the future of computing, but an important reality for IT and business executives alike. Enterprises have embraced the cloud, while still maintaining important investments in on-premises systems. This decision helps increase their flexibility to meet rapidly changing needs, especially in this era of the always-on business.

Doing so requires not just an enterprise-class database, but also a flexible and feature-rich database platform that provides the performance, availability, security, scalability and ease of management that is essential in hybrid environments. Whether it's a production-class on-premises database, a hosted cloud-based database service or a managed service for database functions, organizations demand the same capabilities they've been accustomed to from their relational databases—and more.

The IBM Db2 family provides the breadth and depth of database deployment and service options that fit almost any enterprise-wide cloud migration, growth and long-term cognitive computing strategy. Db2 database software, Db2 Hosted and Db2 on Cloud represent an integrated approach to enterprise databases that helps organizations make their move to the cloud seamless and efficient. The platform's unique ability to promote integration, exchange and interoperability of data across architecture types is a model for databases in the era of the always-on business.

For more information

To learn more about how the IBM Db2 platform supports the always-on business journey to the cloud, please visit **ibm.com**/db2/luw.

1 ICD FutureScape: "Worldwide Cloud 2016 Predictions—Mastering the Raw Materials of Digital Transformation" IDC, November 2015

2 "IBM Center for Applied Insights Survey," IBM, 2016

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